

# HAND SURGERY



Relieving  
Your Pain and  
Restoring Function

## When Your Problem Gets Out of Hand

Your hands play a vital role in nearly everything you do. So when something goes wrong with your hands, it can disrupt your daily routine.

### Common Hand Problems

The three most common groups of hand problems are:

- **Tenosynovitis** (swollen and inflamed tendons)
- **Lumps** (such as cysts or tumors)
- **Contractures** (loss of some motion in a finger or thumb)

Any one of these problems can cause pain or impair function, making it hard for you to carry on your normal activities. If so, it may be time to consider surgery.



Tenosynovitis is often painful, making normal hand movement difficult.



Hand lumps may cause you concern. But they often just look more dangerous than they really are.



Contractures prevent fingers from straightening and functioning normally.

## Hand Surgery May Help

Your doctor may have tried other treatments such as a splint or cortisone injections. But when that didn't completely solve your problem, your doctor suggested surgery. This may be the best option to relieve your pain and restore movement and function in your hand. Your surgeon has the special skills necessary to successfully treat your problem.



Your surgeon will help you decide if surgery is your best treatment option.

### Learning More

Your hand is made up of many parts. Reading this booklet can help you understand how your hand works, what is causing your problem, and the tests you might have. You'll also learn what to expect before, during, and after surgery. This can help you make decisions about your treatment.

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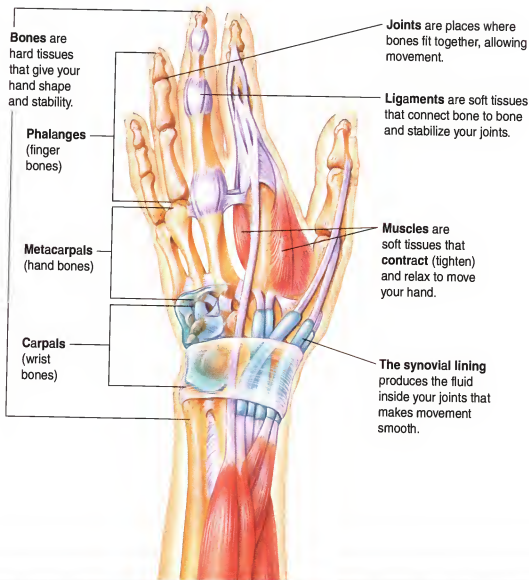
Only your doctor can diagnose and treat a medical problem.  
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## An Inside Look at Your Hands

Your hands are made up of more bones and moving parts than most other areas of your body. When they're healthy, all of these parts work together to perform many kinds of tasks—from delicate movements to acts of strength. By learning how the parts of a healthy hand work together, you'll better understand what's causing your problem.

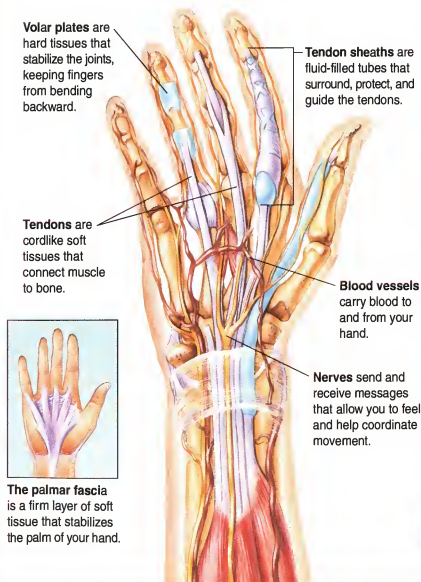
### Back view of your left hand

Place your left hand next to the drawing below, and picture the parts just below the surface of your skin. Slowly bend a finger. It's your joints and muscles that allow you to do that.



### Palm view of your right hand

Place your right hand next to the drawing below and gently try to bend a finger backward. You can't bend it far because the volar (palmar) plate keeps it from moving in that direction.



## Your Hands at Work



### Moving

Muscles, tendons, nerves, and bones all work together to control delicate hand movements, like those you use to play the piano or type.



### Gripping

Muscles and bones work with the palmar fascia to give you the strength to grip and lift heavy objects.



### Touching

Nerves in your hands are so sensitive that they can help you tell the difference between a nickel and a quarter, even when you're not looking at them.

## Your Medical Evaluation

To make a diagnosis, your surgeon does an evaluation. This may include your medical history, a hand exam, and tests such as x-rays or nerve tests.

### Medical History

Your surgeon may ask about your general health, and for details about any recent hand injuries. He or she may also want to know the kinds of tasks you perform on the job, since many hand injuries are work-related.

### The Hand Exam

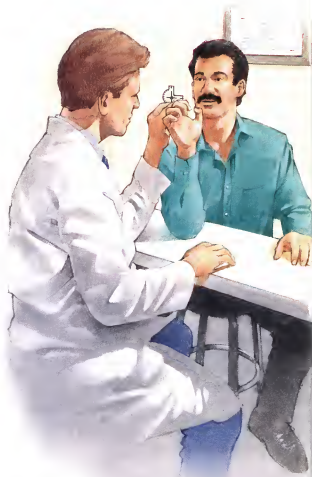
To pinpoint your problem, your surgeon will closely examine your hand. He or she will look for signs of infection, sensitive areas, and places where function and movement are impaired. Your hand's **range of motion** (how much the fingers and hand can bend and straighten) will also be tested.

### X-rays

To confirm a diagnosis, your surgeon may order x-rays, nerve tests, or other imaging tests to see what's happening inside your hand.

### Choosing Surgery

Together, you and your surgeon will decide whether your hand problem can best be treated with surgery. Most hand problems are not emergencies, so you can usually schedule surgery when it's convenient.



Your surgeon may measure your hand's range of motion with a goniometer.

## Your Surgical Experience

The procedure may be done in your surgeon's office, a hospital, or an outpatient surgical center. The type of surgery will determine whether you can go home the same day, or need to stay overnight in the hospital.

### Planning Ahead

To make recovery easier:

- Shop ahead for disposable plates and foods such as frozen dinners.
- Sign some checks ahead of time if the surgery will be on the hand you write with.
- Arrange for someone to drive you home after surgery.
- Ask your surgeon how long you will need to be away from work.

### Before Surgery

To reduce the risk of complications:

- Stop smoking and don't take any aspirin for at least 1 week before surgery.
- Don't eat or drink anything (even water) for 8 hours before surgery.

### During Surgery

Your surgeon will talk with you about the type of **anesthesia** you will receive during surgery. A **general anesthetic** lets you sleep. A **regional anesthetic** numbs your hand and arm. A **local anesthetic** numbs just the area of surgery. With local anesthesia, you may feel some discomfort from the **tourniquet** (cuff) on your arm, which is needed to prevent blood flow to your hand during surgery.



Your surgery may last anywhere from 30 minutes to several hours.

### Risks and Complications

Your surgeon will discuss the risks of surgery with you, including:

- Excessive bleeding
- Severe swelling
- Unrelieved pain
- Impaired circulation
- Tingling or numbness
- Impaired movement
- Infection



## Surgery for Tenosynovitis

Pain is the first sign of tenosynovitis, an inflammation of the tendons. This condition limits a finger's or thumb's ability to bend and straighten. A common cause is **repetitive motion**, in which the same action is repeated over and over. This can irritate a tendon, causing it to become swollen and inflamed. The goal of surgery is to open up space around the swollen tendon to prevent further swelling and to relieve pain. The size and location of the scar will vary, depending on the type of procedure you have.

### Condition

#### Trigger Finger

Trigger finger, a type of tenosynovitis, occurs in a finger or the thumb. It is often caused by repeatedly grasping an object. When a swollen tendon can't slide through its tendon sheath, the tendon "locks," often in the bent (trigger) position. When the finger is moved, you may feel a pop or catching sensation.

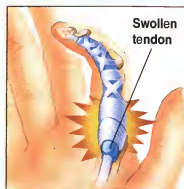
#### De Quervain's Tenosynovitis

De Quervain's tenosynovitis is similar to trigger finger, but affects only the thumb. It can be caused by repetitive motion, injury, or aging. The tendon either becomes inflamed or its sheath becomes too tight to allow normal movement. You may notice a "knot" on your wrist near the thumb. You may also feel pain as you use the thumb to pinch or grasp objects.

#### Intersection Syndrome

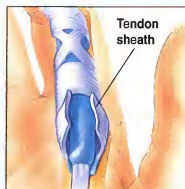
Intersection syndrome is also called **crossover tenosynovitis**. It occurs when the tendons on the wrist near the thumb rub together. This can be the result of repetitive motion, injury, or tendons that are too close together. As the thumb or wrist is moved up and down, there may be pain and a grating sound. The rubbing makes the tendons swell and causes scar tissue to form.

### Problem



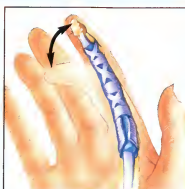
The swollen tendon can't move through its tendon sheath, so the finger stays bent.

### Procedure

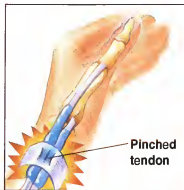


A small piece of the tendon sheath is cut to enlarge space and release the swollen tendon.

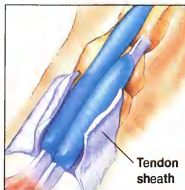
### Result



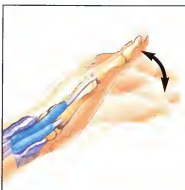
The tendon is free to move through its tendon sheath. This allows the finger to straighten better.



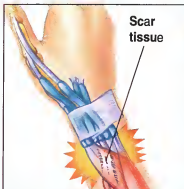
The tendon is pinched in its tendon sheath, making straightening and bending the thumb painful.



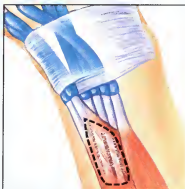
The affected tendon sheath is cut to allow more space for the pinched tendon.



The tendon is free to move through its tendon sheath. This allows the thumb to straighten better.



As the tendons swell, they rub together, forming scar tissue.



The scar tissue is removed, creating more space around the tendons.



With the excess scar tissue removed, tendons can glide smoothly without scraping across one another.

## Surgery for Hand Lumps

Although they may cause concern, lumps in your hands are usually harmless. Some may be **cysts** (fluid-filled lumps), others are **tumors** (lumps caused by an abnormal growth of tissue). A lump is often caused by an injury to the hand. It may become so large that it interferes with the use of your hand. Your surgeon removes the lump to help restore your hand's function and relieve any pain. The size and location of the scar will vary, depending on the type of procedure you have.

### Condition

#### Ganglion Cyst

Ganglion cysts are firm, fluid-filled lumps. They are found often on the back, and sometimes the front, of the hand. They may be caused by an injury to the hand. These cysts are often painful at first and may make some hand or wrist movements difficult. A ganglion cyst sometimes reappears after it's been surgically removed.

#### Mucous Cyst

A mucous cyst is a kind of ganglion cyst, and is found on the end joint of a finger. It is often caused by arthritis, or injury to the joint. The cyst is usually firm and sometimes painful. The fingernail may grow unevenly because the cyst is near the nail growth cells. A mucous cyst may reappear after it's been surgically removed.

#### Giant Cell Tumor

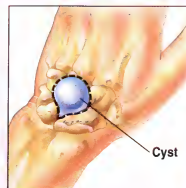
A giant cell tumor is very rarely cancerous. It often starts out as a small, hard, unevenly shaped lump on a finger or hand. The growth is usually the result of a blow to the hand from a blunt instrument like a hammer. It may stay the same size for years and then grow larger. The tumor may be painful and impair movement.

### Problem



The fluid-filled cyst causes pain or impairs movement.

### Procedure

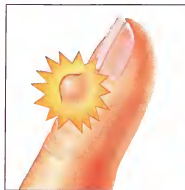


The cyst is removed.

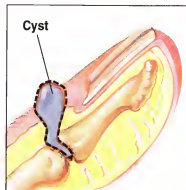
### Result



Once the cyst is gone, painless movement is restored.



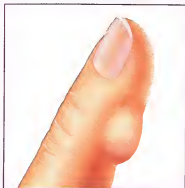
A mucous cyst may cause pain.



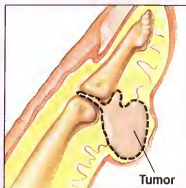
The cyst is removed.



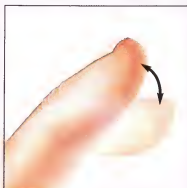
Once the cyst is gone, healthy skin regrows.



The unevenly shaped tumor sometimes grows from one side of the finger to the other.



The tumor is removed.



Once the tumor is gone, pain is lessened and movement is restored.

# Surgery for Contractures

A contracture of the hand, finger, or thumb is a condition that leads to decreased range of motion. It can be inherited or the result of an injury. If a finger won't straighten properly, it can be difficult to use the hand. Your surgeon can help relieve pain and restore motion by removing, repairing, or replacing the tissue that's causing the contracture. The size and location of the scar will vary, depending on the type of procedure you have. After surgery, your surgeon may prescribe hand exercises or therapy to do under the guidance of a hand therapist. This can help you regain normal movement and function in your hand.

## Condition

### Dupuytren's Contracture

Dupuytren's contracture is an abnormal thickening of the palmar fascia near the ring and little fingers. It can be an inherited disease, and is most often found in middle-aged people of northern European ancestry. The condition is painless, but it often restricts movement so much that the fingers can't straighten.

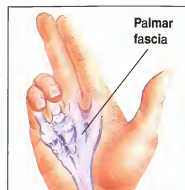
### Flexor and Extensor Tendon Injuries

Tendons of the fingers and hand can be injured by cuts. They can also be torn or snapped when a finger is yanked or jerked. During the surgery, your surgeon will rejoin the two ends of the tendon and repair any other damaged tissue. In some cases, new tendon will be grafted to replace the old one.

### Basal Joint Arthritis

The basal joint, in the lower part of the thumb, is commonly affected by arthritis. The joint becomes inflamed and slowly wears out. Pinching and grasping become very painful, sometimes impossible. Common surgeries for this condition include excisional arthroplasty (pictured on the right) and artificial joint replacement.

## Problem



Bands of the palmar fascia tighten so fingers can't straighten.

## Procedure

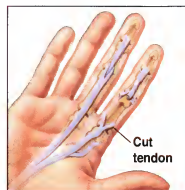


The thickened bands of the palmar fascia are removed.

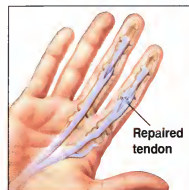
## Result



Hand therapy after surgery helps the fingers heal and straighten better.



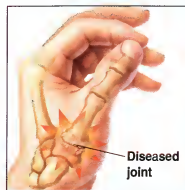
A cut tendon causes the finger to lose its function.



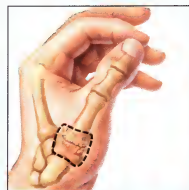
The ends of the tendon are reattached.



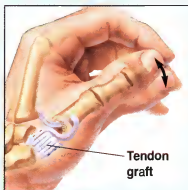
Hand therapy after surgery helps the finger heal and function better.



The joint is so irritated and swollen that pinching and grasping are difficult and painful.



The diseased joint is removed. It is replaced with a tendon graft (a piece of tendon from your arm or wrist).



With the tendon graft in place, you'll have less pain and be able to use your thumb again.

## Help Your Hand Heal

After surgery, the better you take care of yourself—especially your hand—the sooner it will heal. Follow your surgeon's instructions. Try not to bump your hand, and don't move or lift anything while you're still wearing bandages, a splint, or a cast.

### Keep It Up

Keep your hand elevated above heart level for the first several days after surgery. This helps reduce swelling and pain.



Keep your hand elevated to reduce swelling and help your hand heal.

### Keep It Dry

To help prevent infection and speed healing, take care not to get your cast or bandages wet.



Keep your hand dry while bathing by wrapping your hand in plastic and securing it with tape.

### Relieve the Pain

Your surgeon may prescribe pain medication or suggest you take an anti-inflammatory medication. You might also be instructed to apply ice (or another cold source) to your hand. If you use ice cubes, put them in a plastic bag and rest it on top of your bandages. Leave the cold source on your hand for as long as it's comfortable. Do this several times a day for the first few days after surgery. It may take several minutes before you can feel the cold through the cast or bandages.

## Follow Up with Your Surgeon

During a follow-up visit after surgery, your surgeon will check your progress. The stitches, bandages, splint, or cast may be removed. Or a new cast or splint may be placed. If your hand has healed enough, your surgeon may prescribe exercises.

Your surgeon will usually remove your bandages within 2 weeks after surgery.

### Hand Exercises

Your surgeon may recommend that you do exercises. These may be done under the guidance of a physical therapist. The exercises strengthen your hand, help you regain flexibility, and restore proper function. Do the exercises as advised.



Squeezing a sponge helps restore your hand's flexibility.

Healthcare provider's instructions:



A splint helps you regain finger joint extension (the straightening motion).

Healthcare provider's instructions:



### Call your surgeon if you have...

- A fever higher than 100°F (37.7°C).
- Side effects from your medication, such as prolonged nausea.
- A wet or loose dressing, or a dressing that is too tight.
- Excessive bleeding.
- Increased, ongoing pain or numbness.
- Signs of infection (such as warmth or redness) at the incision site.



# Give Yourself a Hand

You can play an active role in your recovery and help ensure your return to everyday activities—both at home and at work. Taking good care of your hands will help them work (and play) for you for a lifetime.

## Resources

The following resources can help you learn more about hand surgery.

**American Society for  
Surgery of the Hand**  
[www.aash.org](http://www.aash.org)

**American Association  
for Hand Surgery**  
[www.handsurgery.org](http://www.handsurgery.org)

**American Society of  
Hand Therapists**  
[www.asht.org](http://www.asht.org)



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